

(21) Application No 8620517

(22) Date of filing 22 Aug 1986

(71) Applicant
Pinto Chemical Company Limited

(Incorporated in United Kingdom)

13 Knightsbridge Green, London SW1X 7QL

(72) Inventors
Bernard Etzin
Ian Gaylor

(74) Agent and/or Address for Service
Eric Potter & Clarkson,
14 Oxford Street, Nottingham NG1 5BP

(51) INT CL⁴
B65D 19/26 // 19/32

(52) Domestic classification (Edition J):

B8H OG
E2A 120 163 190 510 AK
U1S 1898 B8H E2A

(56) Documents cited

GB A 2035953 GB 1112400 EP A1 0226505
GB 1523138

(58) Field of search

B8H
Selected US specifications from IPC sub-class B65D

(54) Pallet

(57) A pallet is composed of plastics mouldings 11,12 each comprising a platform 13,18 and a plurality of pillar portions 16,20. The pillar portions are attachable together to form a pallet having upper and lower platforms separated by pillars. The pillar portions are hollow so that the separated platforms are stackable with the pillar portions inter-nested. The pillar portions forming each pillar are releasably latchable together by latches 40 actuable by a manual knob 46 accessible through one of the hollow pillar portions. Each latch has a plurality of detents 41 which engage in aligned apertures 36,37 in the pillar portions rotation of the knob causing pegs to move the latches between their engaged and disengaged positions. The detents are located between plates 43,44 and the latches are secured to the lower pillar portions by capturing a projection 39 between the detents and the upper plate.

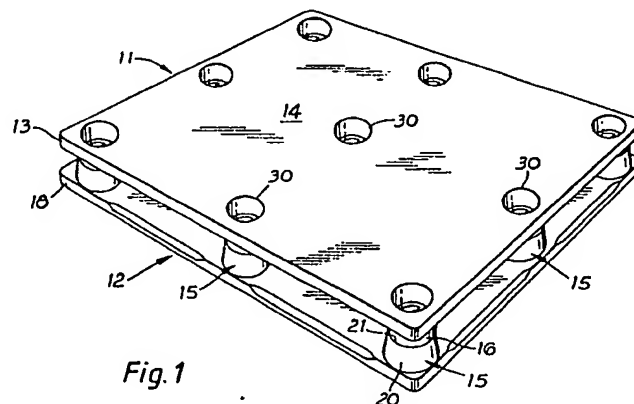


Fig. 1

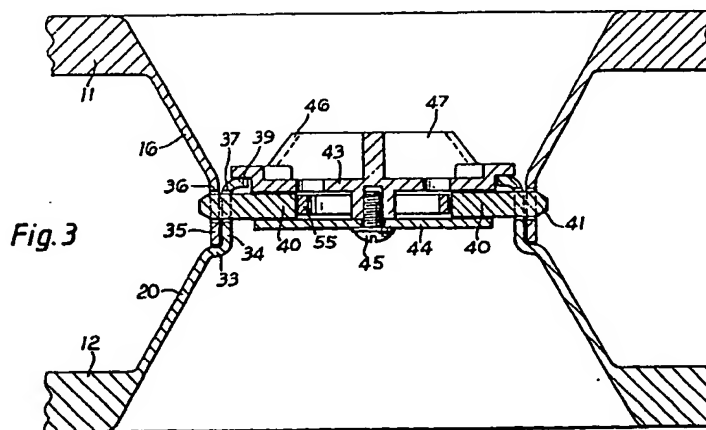


Fig. 3

GB 2 194 213 A

The drawing(s) originally filed was/were informal and the print here reproduced is taken from a later filed formal copy.

The claims were filed later than the filing date within the period prescribed by Rule 25(1) of the Patents Rules 1982.

The references to Fig. 4 of the drawings in the printed specification are to be treated as omitted under Section 15(2)/15(3) of the Patents Act.

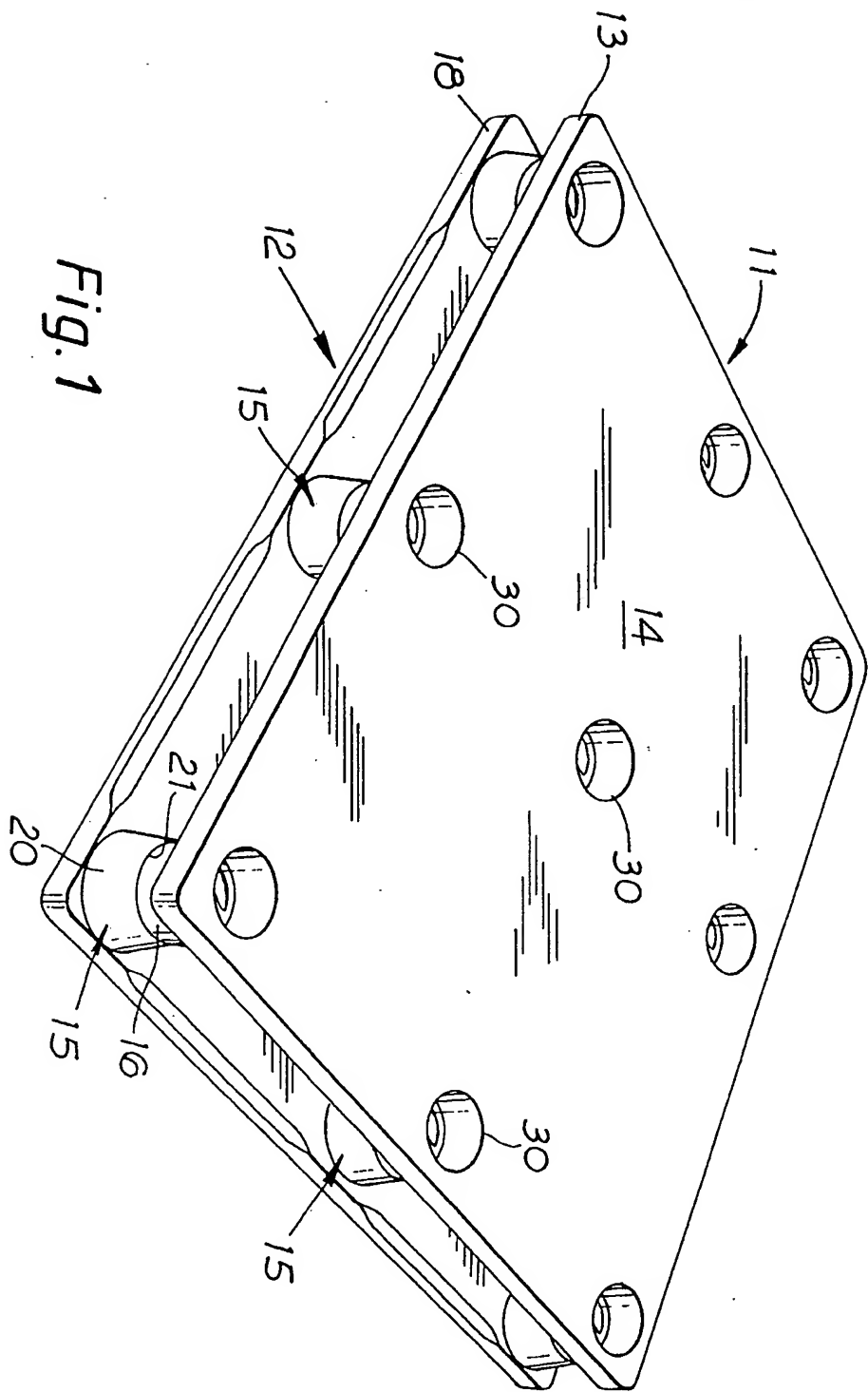


Fig. 1

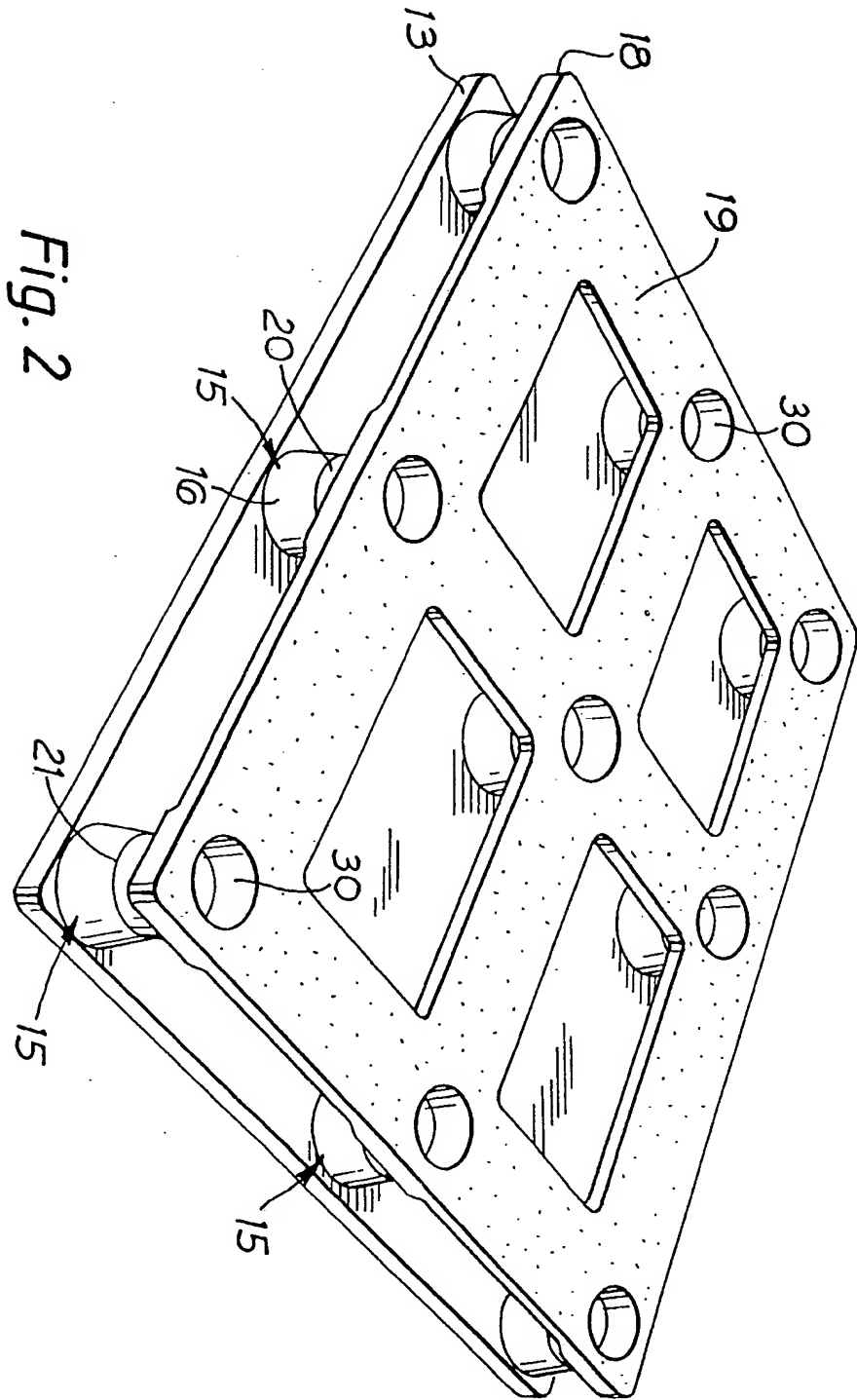
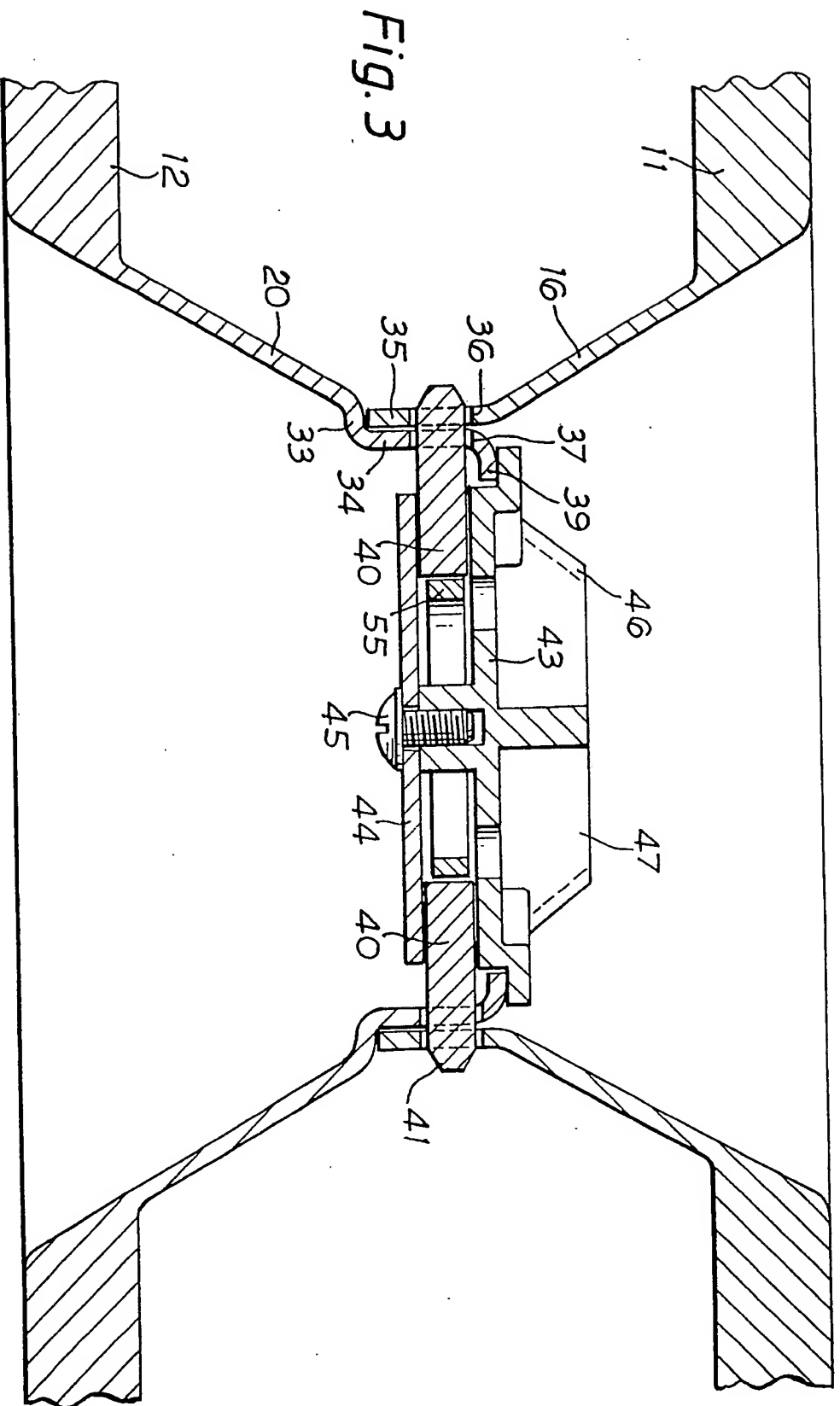
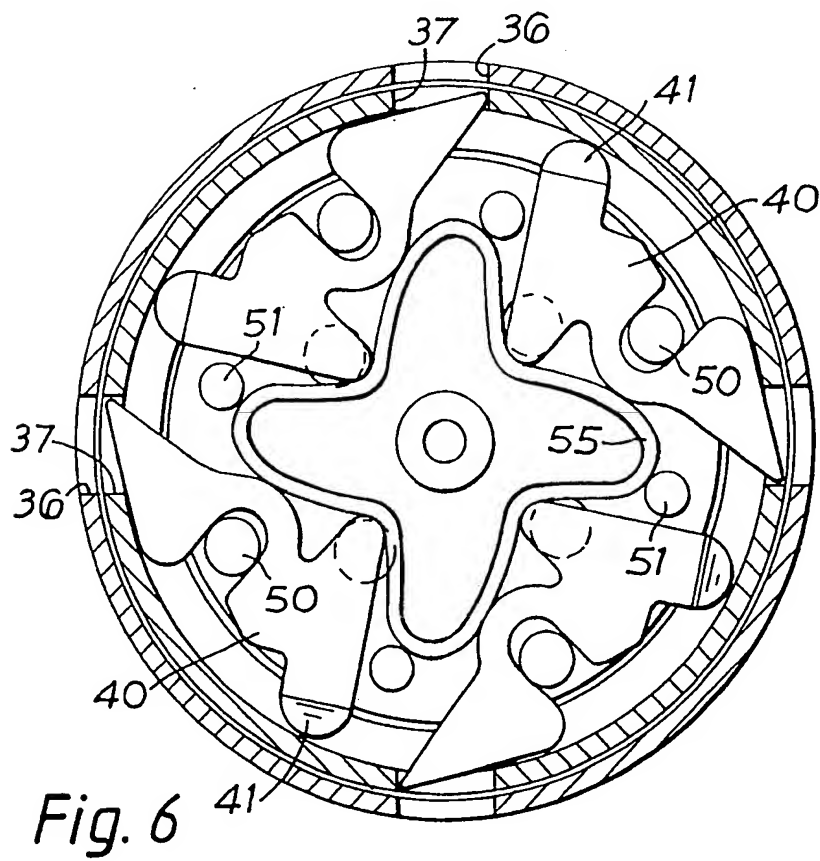
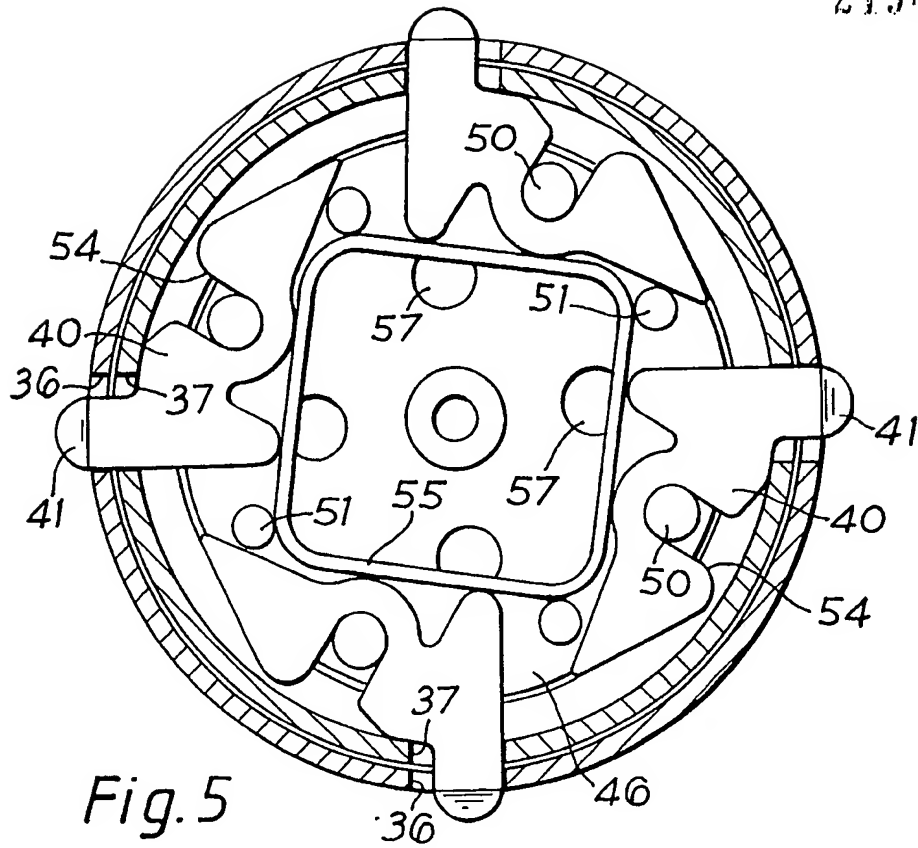


Fig. 2



2194213



SPECIFICATION

Pallets

- 5 This invention relates to pallets.

Pallets are usually made from strips and blocks of wood and comprise parallel upper and lower platforms separated by pillars. In use, the forks of a fork lift truck can engage between the platforms to carry the pallet and the upper platform can be loaded with goods.

- 10 Pallets are commonly used for supporting goods in the hold of a ship, since this facilitates loading and unloading of the goods. A disadvantage is that, once the pallets reach their destination, they are often of no further use. Pallets can make a return journey, but are often not required, so that there is an accumulation of pallets at the end of the journey.
- 20 The pallets can be shipped back, but they are bulky and this is expensive. In addition, pallets are prone to damage and they have a short span of usefulness.

- The present invention avoids these problems.

- 25 In accordance with this invention there is provided a pallet comprising parallel upper and lower platforms separated by pillars, wherein each pillar comprises upper and lower portions secured respectively to the upper and lower platforms, and detachably connected together.

- This arrangement allows the upper and lower platforms to be detached, so that separated pallet parts can be stacked in substantially less space than can the pallets as a whole.

- 35 The upper and lower portions are preferably plastics mouldings.

- Advantageously, in the pallet, each pillar portion is hollow and opens at the outer surface of the corresponding platform so as to define a socket, each pillar portion being externally and internally tapered so as to permit nesting of the portion in the socket of the other portion of the pillar, when inverted, and also so as to permit nesting of said other portion in the socket when inverted.

- The means for detachably securing the upper and lower portions of each pillar together comprises latches on one of the portions and rotatable actuating means accessible through the adjacent opening in the corresponding platform for actuating the latches.

- Reference is now made to the accompanying drawings, wherein:-

Figure 1 is a perspective view of a pallet according to the invention, showing the loading platform of the pallet;

- 60 *Figure 2* is a perspective view of the pallet showing its bottom;

Figure 3 is a cross-sectional view of one pillar of the pallet;

Figure 4 is a sectional view showing nesting of portions of pillars;

- 65 *Figure 5* illustrates a latch mechanism of a

pillar of the pallet in latched position; and *Figure 6* illustrates the latch mechanism in unlatched position.

- Referring to Fig. 1, the pallet shown comprises an upper part 11 and a lower part 12. The upper part 11 comprises an upper platform 13 whose top surface defines a loading surface 14, and an upper portion 15 of each pillar 15. The lower part 12 similarly comprises a lower platform 18 having a bottom surface 19 (Fig. 2) and a lower portion 20 of each pillar 15. The lower portion of each pillar is detachable from the upper portion along a line 21.

- 80 The upper and lower platforms 11, 12 have openings 30 at their outer surfaces 14, 19. Each opening defines the mouth of a socket formed by the hollow interior of a corresponding pillar portion 16, 20. Each pillar portion is frusto-conical with its larger diameter end at the respective opening 30 and has a corresponding frusto-conical internal surface (Fig. 3). This arrangement permits nesting of an upper pillar portion 16 in an inverted lower pillar portion 20 and, similarly, permits nesting of an inverted lower portion 20 in an upper pillar portion 16. This is illustrated in Fig. 4.

- The lower pillar portion 20 has an annular shoulder 33 formed near its end remote from the lower platform 12 with an annular flange 34 projecting from the shoulder 33. The upper pillar portion 16 terminates in an annular flange 35 at its end remote from the upper platform 11. The upper annular flange 35 seats on the shoulder 33 and is located by telescopic engagement about the lower annular flange 34.

- The telescopically engaged flanges 34, 35 are provided with a plurality of circumferentially spaced apertures 36, 37, each aperture 36 of one flange being aligned with a corresponding aperture 37 of the other flange (Fig. 5). The annular flange 34 of the lower pillar portion 20 terminates in an intumed annular projection 39.

- A plurality of latches 40 are provided, each latch having a detent 41 which engages in aligned apertures 36, 37 to latch the pillar portions 16, 20 together. The latches are captivated between spaced upper and lower plates 43, 44 joined together by a screw 45. The latch assembly of the latches 40 and plates 43, 44 is secured to the lower pillar portion 20 by captivation of the inner projection 39 between the latches 40 and the upper plate 43.

- The upper plate 43 forms part of a rotatable actuating knob 46 having ribs 47 to facilitate manual grip. The upper plate 43 has first and second pegs 50, 51 (Fig. 5) on its face opposed to the grippable ribs 47. The first pegs 50 engage in slots 54 of corresponding latches 40 and the latches are resiliently biased to engage both the apertures 36, 37 and the pegs 50 by central resilient tube 55. As

the knob 46 is rotated, the pegs 50 move the latches 40.

- The latched position is illustrated in Fig. 5. Rotation of the knob and the latches in an anti-clockwise direction is prevented by engagement of detents 41 in the apertures 36, 37 and by engagement of the latches with the second pegs 51. The knob is rotatable in a clockwise direction, since the latches then disengage the second pegs 51 and rotate about the first pegs 50, so that the detents are cammed out of the apertures 36, 37 against the bias of the tube 55. The unlatched position is illustrated in Fig. 6.
- 15 The plate 43 of the knob 46 has sight ports 57 to permit visual inspection of the latch operation.

CLAIMS

- 20 1. A pallet comprising an upper platform for supporting articles to be transported, a lower platform for seating on a support surface, the lower platform being parallel to the upper platform and located directly beneath the upper platform, a plurality of pillars secured to the upper and lower platforms and supporting the upper platform on the lower platform, each pillar comprising a first portion secured to the upper platform and a second portion secured to the lower platform, and latching means releasably securing the first portion to the second portion, whereby the upper and lower platforms can be separated relative to each other.
- 35 2. A pallet according to Claim 1, wherein, in each pillar, the first portion and the second portion have nestable parts and the latching means is actuable to interconnect the nestable parts.
- 40 3. A pallet according to Claim 1, wherein each first pillar portion is hollow and opens at a first aperture in the upper surface of the upper platform, each first pillar portion being tapered so that a plurality of upper platforms may be separated from the lower platforms and stacked with the first portions inter-nesting.
- 45 4. A pallet according to Claim 3, wherein each second pillar portion is hollow and opens at a second aperture in the lower surface of the lower platform, each second pillar portion being tapered so that a plurality of lower platforms may be separated from the upper platforms and stacked with the second portions inter-nesting, the first portions also being inter-nestable with the second portions to permit mixed stacking of upper and lower platforms.
- 50 5. A pallet according to Claim 2, wherein at least one of the pillar portions is hollow and opens at an aperture in the outer surface of the platform to which it is secured, and the latching means comprises a rotatable drive element mounted in said hollow pillar portion
- 65 for accessibility through said aperture, and a

plurality of latches actuable by rotation of said drive means.

- 70 6. A pallet according to Claim 5, wherein the nestable parts of the first and second pillar portions have aligned apertures when nested, the latches being actuable to extend through said apertures to interconnect the pillar portions.
- 75 7. A pallet according to Claim 6, wherein the drive means comprises a plurality of pegs engaged with the latches.
- 80 8. A pallet according to Claim 7, including resilient biasing means biasing the latches into engagement with the pegs and into positions extending through said apertures.

Published 1988 at The Patent Office, State House, 66/71 High Holborn, London WC1R 4TP. Further copies may be obtained from The Patent Office, Sales Branch, St Mary Cray, Orpington, Kent BR5 3RD. Printed by Burgess & Son (Abingdon) Ltd. Con. 1/87.